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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/889,686 | 11/28/2001 | Klaus During | 03528.0133.PCUS00 | 7122 |

7590 07/07/2006
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EXAMINER

HELMER, GEORGIA L

ART UNIT PAPER NUMBER

1638

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 09/889,686 | Applicant(s) DURING ET AL. | |
| | Examiner Georgia Helmer | Art Unit 1638 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,23,24 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,23,24 and 28-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

1. Applicant's submission filed 23 January 2006 is acknowledged. Applicant has requested amendment of claims 19 and 23, cancellation of claims 20-22 and 25-27 and addition of new claims 30-33. Claims 19, 23-24, and 28-33 are pending, and are examined in the instant action.
2. This action is made Final.
3. All rejections not addressed below have been withdrawn.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112-2

5. Claims 19 and 23-24, 28-33 dependent thereon, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19, (e) recites "the gas phase". There is insufficient antecedent basis for this limitation in the claim. Claim 19, (g) recites "said expressed protein". There is insufficient antecedent basis for this limitation in the claim.

Claim 31 recites "the groups consisting of therapeutic diagnostic and material proteins." The term "therapeutic diagnostic" is unclear and the metes and bounds of this claims is not apparent. The term "material proteins" is unclear and the metes and bounds of this claim is not apparent

Claim Rejections - 35 USC § 112 Enablement

6. Claims 19, 23-24, 28 and 31-33 are rejected under 35 U.S.C. 112, first paragraph. This rejection is maintained for the reasons of record as set forth in the Office Action mailed 3 June 2004. To the extent that this is a new rejection it is required by Applicant's amendment. To the extent that the rejection was made to the scope of all "plants", the rejection is maintained. Only claims 29 and 30 are drawn to specific plants. Claim 29 is drawn to wheat, barley, corn, sugar beet, sugar cane, potato, brassicaceae, tobacco and legumes. Claim 30 is drawn to potato.

Claims 19, 23-24, and 28-33 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the host plant potato, does not reasonably provide enablement for the broad scope of the claims.

Applicant claims all plants unspecified or host plants wheat, barley, corn, sugar beet, sugar cane, potato, brassicaceae, tobacco and legumes. Applicant teaches the use of the tuber of a potato host plant.

Potato plants are not representative of all plants.

Potato plants are dicotyledonous v. monocots. Potatoes are used as a root vegetable crop plant, wherein the tuber is harvested. Potatoes are vegetatively propagated as opposed to sexually propagated for the seed crops. Potato is an autotetraploid plant as opposed to allopolyploids.

Dicot plants are not representative of all plants. Especially they are not representative of monocot plants. The properties of stems of dicot plants differ from

Art Unit: 1638

those of monocot plants (Raven et al, Biology of Plants (1992), Worth Publishers, New York, NY 10003, pages 382, Table 18, and 494-5, Figures 23-8, 23-9 and 23-10). Dicots show secondary growth, characterized by the presence of secondary meristematic tissue. Dicot stem cells have the capacity to dedifferentiate and become meristematic, whereas monocot stems cells do not have this capacity. It is unpredictable that plants other than dicots would be capable of functioning in the same way as the dicots in the claimed invention. Potatoes are used as a root vegetable crop plant, wherein the tuber is harvested. "The plant parts that are harvested as 'root crops' are all storage organs, and as such they contain carbohydrate material which may be used for human and animal feed." "Unlike the cereals of the pseudo-cereals, their carbohydrate is not in a condensed form". See Walton, P. in Principles and Practice of Plant Science, 1988, published by Prentice Hall, New Jersey, pages 397-400.

Potatoes are vegetatively propagated as opposed to sexually propagated for the seed crops. Potato is an autotetraploid plant as opposed to allopolyploids. As an autotetraploid, potato has four complete chromosome sets of a single genome. The inheritance patterns of an autotetraploid are more complex than that of an allopolyploid. See Fehr, W, in Principles of Cultivar development, Vol 1, 1987, published by McGraw-Hill, p. 62.

Neither the prior art nor Applicant's disclosure shows that plants other than dicot potato plant tubers are capable of functioning as desired in the claimed invention. Accordingly, it is unpredictable that plants other than dicot potato plant tubers can be used to practice the claimed invention as commensurate in scope with the claims.

Remarks

7. No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Georgia Helmer whose telephone number is 571-272-0796. The examiner can normally be reached on 10-6 Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1638

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Georgia Helmer PhD
Patent Examiner
Art Unit 1638- Transgenic Plants
16 April 2006


ELIZABETH MCELREATH
PRIMARY EXAMINER